ABSTRACT OF THE DISCLOSURE

The invention provides a convenient and expandable method for transmitting one or more loss rate statistics determined in a distributed manner from a multicast distribution tree to a source computer. First, the loss rate statistics are collected in a distributed manner from target receiver stations, and from routers in the multicast distribution tree. Second, there is a distributed calculation of statistics on loss rate by routers in the multicast distribution tree. Third, there is transportation of the loss rate statistics back to the source computer in reverse along the multicast distribution tree. For example, congestion information is collected by routers, and the congestion information is sent upstream to the multicast source station in fields of NAK messages. A router may receive a NAK packet in transit from an intended destination station to a source station, the NAK packet indicating loss of a data packet. The router writes a loss rate statistic determined by the router into a "loss rate field" of a message to be sent upstream along the reverse of the distribution tree. The router determines the loss rate statistic to be written into the loss rate field of the message, in response to: analyzing the loss rate statistics on each of its links; the loss rate reported by the incoming NAK packet; and, the elapsed time from the time stamp showing when the various loss rate statistics were determined.